

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF OKLAHOMA

CORE LABORATORIES LP,

Plaintiff,

v.

SPECTRUM TRACER SERVICES, L.L.C.,  
STEVE FAUROT, and KELLY BRYSON,

Defendants.

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CASE NO. 11-CV-1157-M

**PLAINTIFF'S OPENING *MARKMAN* CLAIM CONSTRUCTION BRIEF**

**EXHIBIT 3**

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF OKLAHOMA

CORE LABORATORIES LP,

Plaintiff,

v.

SPECTRUM TRACER SERVICES, L.L.C.,  
STEVE FAUROT, and KELLY BRYSON,

Defendants.

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CASE NO. 11-CV-1157-M

**EXPERT REPORT OF GARY R. WOOLEY**

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Date: April 9, 2012

By: 

## **I. Introduction**

My name is Gary Wooley and I have been retained in this case by Core Laboratories LP. I understand that I may be called to testify at trial in this matter, and I submit this report.

## **II. Qualifications and Professional Experience**

My resumé is attached as Exhibit 1. I have more than 40 years of experience in the petroleum industry, including fracture stimulation and part of that work involved the use of tracers in fracture fluids. I have not published peer reviewed technical articles in the last 10 years.

## **III. Compensation**

I am being paid \$470 per hour plus expenses for work done in this matter regardless of the outcome of this case. I have no financial interest in, and my compensation in no way depends on, the outcome of this case.

## **IV. Other Cases in Which I Have Testified**

Attached in Exhibit 2 is a list of testimony at trial and in deposition in the last four years.

## **V. Scope of Expert Report**

I have been retained by Core as an expert witness in this matter. Core, through its counsel at Sutton McAughan Deaver PLLC, has asked me to offer opinions concerning claim construction issues in connection with U.S. Patent Nos. 6,659,175 and 7,032,662. This report focuses on these claim construction issues. I may provide a further report concerning issues of patent infringement, validity, and other issues at an appropriate time in the future.

## **VI. Information Considered**

In reaching the opinions expressed in this report, I have examined the documents listed in Exhibit 3.

## **VII. Opinions Regarding Interpretation of Claim Terms**

Following are comments on specific proposed claims about which I have opinions:

## **1. "Extent"**

Found in Claims 1 and 11 of the '175 Patent. Found in Claims 1 and 14 of the '662 Patent.

In my opinion, the term "extent" as used in the claims of the '175 and '662 Patents means "degree."

I disagree with the Defendants' proposed construction:

*"Specifically, 'extent' means 'the point or degree to which something extends.'"*

The Defendants' proposed definition for "extent" is circular because it uses a derivative of the word to define the word. Generally, it is not good practice to use a word or its derivative in its definition. Besides being circular, this approach raises a related question, what is the definition of "extends?"

The word "extends" has other meanings, and Defendants' use of this word may be misleading. For example, "extends" often is used to mean "lengthen" or "make longer." Also, "extends" can refer to time and mean "makes last longer." These meanings for "extends" do not apply to the use of "extent" in the claim language.

Further, the use of the word "extends" in the definition does not make sense in the context of the claim language. Substituting Defendants' proposed definition for the term "extent" into the claim language of Claim 1 of the '175 patent, for example, demonstrates the problem with Defendants' proposed definition:

A method of determining the "point or degree to which something extends" of recovery of materials injected into an oil well...."

## **2. "Extent of Recovery"**

Found in Claims 1 and 11 of the '175 Patent. Found in Claims 1 and 14 of the '662 Patent.

My comments are very similar to the definition of "Extent" in item 1 above.

In my opinion, the term "extent of recovery" as used in the claims of the '175 and '662 Patents means "degree of recovery."

I disagree with the Defendants' proposed construction:

*"Specifically, 'extent of recovery' means 'the point or degree to which the recovery of ['materials injected' or 'material of interest'] extends.'"*

The Defendants' proposed definition for "extent of recovery" is circular because it uses a derivative of a word to define the word. Generally, it is not good practice to use a word or its derivative in its definition. Besides being circular, this approach raises a related question, what is the definition of "extends?"

The word "extends" has other meanings, and Defendants' use of this word may be misleading. For example, "extends" often is used to mean "lengthen" or "make longer." Also, "extends" can refer to time and mean "makes last longer." These meanings for "extends" do not apply to the use of "extent" in the claim language.

Also, see my other comments with respect to the term "extent" and how Defendants' proposed definition does not make sense.

### **3. "Amount"**

Found in Claims 1, 9 and 11 of the '175 Patent. Found in Claims 1, 10, 14 and 21 of the '662 Patent.

In my opinion, the term "amount of ['admixture' or 'material of interest'] recovered" as used in the claims of the '175 and '662 Patents means "quantity of ['admixture' or 'material of interest'] recovered.""

I disagree with the Defendants' proposed construction:

*"Specifically, 'amount of ["admixture" or "material of interest"] recovered' means 'the total quantity of ["admixture" or "material of interest"] recovered.'"*

The Defendants' proposed definition for "amount" adds the word "total" to "quantity," which raises questions. First, no such modifier exists in the original claim language which consists of the noun "amount" without an adjective. Second, it is unclear to what the word "total" refers. Does this mean as opposed to partial? Third, adding the word "total" may add meaning in the form of a sum of two or more components. Such additional meaning does not exist in the original claim language, as the claim would be understood by a person of ordinary skill in the art.

#### 4. "Amount"

Obviously, very similar to item 3 above, yet Defendants make a distinction.

Found in Claims 1, 9 and 11 of the '175 Patent. Found in Claims 1, 10, 14 and 21 of the '662 Patent.

In my opinion, the term "amount" as used in the claims of the '175 and '662 Patents means "quantity."

I disagree with the Defendants' proposed construction:

*"Specifically, 'amount' means 'the total number or quantity.'"*

The Defendants' proposed definition for "amount" adds the words "total" and "number" to "quantity," which raises questions.

The first part of Defendants' proposed definition is for "amount" to mean "total number." First, no such modifier as "total" exists in the original claim language which consists of the noun "amount" without an adjective. Second, it is unclear to what the word "total" refers. Does this mean as opposed to partial? Third, adding the word "total" may add meaning in the form of a sum of two or more components. Such additional meaning does not exist in the original claim language, as the claim would be understood by a person of ordinary skill in the art.

Fourth, using the Defendants' construction would require the noun "number" to be defined. In general, and in this particular application, the word "number" does not have the same meaning as "amount." Number refers to a digit, such as 1, 2 or 3. In mathematics there are many types of numbers, e.g. real and imaginary numbers, so much clarification would be needed. In general, numbers do not have units associated with them, again e.g. 1, 2 or 3.

In contrast, the word "amount" infers a unit such as 1 gallon, or 2 inches. Likewise, the word "quantity" infers a unit, so it is an acceptable substitute. For example, the "amount" of a liquid might be 3 gallons, but the "number" 3 is not sufficient to define the amount of liquid.

Defendants' use of the word "total" in connection with this claim term raises the same questions as in item 3, above. First, no such modifier exists in the original claim language which consists of the noun "amount" without an adjective. Second, it is unclear to what the word "total" refers. Does this mean as opposed to partial? Third, adding the word "total" may add meaning in the form of a sum of two or more components. Such additional meaning does not exist in the original claim language, as the claim would be understood by a person of ordinary skill in the art.

## **5. "Calculating"**

Found in Claims 1 and 11 of the '175 Patent. Found in Claims 1 and 14 of the '662 Patent.

In my opinion, the term "calculating" as used in the claims of the '175 and '662 Patents means "determining by mathematical process."

Furthermore, it is my opinion that the term "calculating" as used in the claims of the '175 and '662 Patents includes at least the two methods disclosed in the specifications of those two patents. Specifically, the term "calculating" includes both the mass balance approach disclosed at column 5, lines 28-43 of the '175 Patent, and also the relative rate of recovery approach disclosed at column 5, lines 44-52 of the '175 Patent.

I disagree with the Defendants' proposed construction:

*"Specifically, 'calculating' means 'ascertaining the amount of something by mathematical calculation.'"*

The Defendants' proposed definition for "calculating" is circular because it uses a derivative of a word to define the word. Generally, it is not good practice to use a word or its derivative in its definition. As with all circular arguments, this approach raises a related question, what is the definition of "calculation?" Would Defendants propose "the result of calculating" as a definition of "calculation," thus completing the circle?

Defendants' use of "ascertaining" is close to the meaning of "determining" proposed by Core. The Defendants' proposed phrase "amount of something" is superfluous and may require clarification. The key word proposed by Defendants is "calculation," and it provides no clarity on the meaning of "calculating." Core's proposed use of "process" is more meaningful and accurate.

It appears that Defendants are attempting to add a limitation to the "mathematical process" of "calculating" that restricts the mathematical tools that can be used to only analytic equations and prevents the use of other possible mathematical tools, such as software, hardware, graphical interpretation and other possible processes. Such a limitation does not exist in the original claim language, as the claims would be understood by a person of ordinary skill in the art.

## **6. "Calculating the Amount"**

"Calculating the amount of ['admixture' or 'material of interest'] recovered.

Found in Claims 1 and 11 of the '175 Patent. Found in Claims 1 and 14 of the '662 Patent.

Issues with construction here are similar to those described in item 5 above for the general use of calculating. Here, calculating refers to a specific amount.



In my opinion, the term "calculating the amount of ['admixture' or 'material of interest'] recovered" as used in the claims of the '175 and '662 Patents means "determining by mathematical process the amount of ['admixture' or 'material of interest'] recovered."

I disagree with the Defendants' proposed construction:

*"Specifically, 'calculating the amount of ["admixture" or "material of interest"] recovered' means 'ascertaining the amount of ["admixture" or "material of interest"] recovered by performing a mathematical calculation.'"*

The Defendants' proposed definition for "calculating the amount of" is circular because it uses a derivative of a word to define the word. Generally, it is not good practice to use a word or its derivative in its definition. As with all circular arguments, this approach raises a related question, what is the definition of "calculation?" Would Defendants propose "the result of calculating" as a definition of "calculation," thus completing the circle?

Defendants' use of "ascertaining" is close to the meaning of "determining" proposed by Core. Defendants' use of the proposed word "performing" is superfluous and may require clarification. The added meaning of inserting "performing" in the definition is may be misleading and it is not part of the original claim language. Also, use of "performing" is inconsistent with the Defendants' proposed construction for item 5 above which used the phrase "by mathematical calculation" without inserting "performing" as Defendants did here in item 6.

The key word proposed by Defendants is "calculation," and it provides no clarity on the meaning of "calculating." Core's proposed use of "process" is more meaningful and accurate.

It appears that Defendants are attempting to add a limitation to the "mathematical process" of "calculating" that restricts the mathematical tools that can be used to only analytic equations and prevents the use of other possible mathematical tools, such as software, hardware, graphical interpretation and other possible processes. Such a limitation does not exist in the original claim language, as the claims would be understood by a person of ordinary skill in the art.

**7. "Oil Well"**

Found in Claims 1, 5, 6, 7, 8 and 11 of the '175 Patent.

In my opinion, the term "oil well" as used in the claims of the '175 Patent means "hydrocarbon production wells, but any other type of well that can require stimulation by hydraulic fracturing," as defined in the '175 Patent specification.

In part I agree with the Defendants' proposed construction where Defendants propose "oil well" means "hydrocarbon (oil and gas) production from well drilled in the earth, hereinafter referred to as 'oil wells'," as described in the '175 Patent.

I disagree with the Defendants' proposed construction where Defendants propose relating an "oil well" to "the amount of drilling fluid recovered." As its name implies, drilling fluid is used in the drilling of a well prior to the use of the tracers that are the subject of the '175 Patent. Drilling fluid may or may not be lost to the formation during drilling, and therefore may or may not subsequently be recovered during flow back after hydraulic fracturing. The '175 Patent specifically deals with a method of using tracers in hydraulic fracturing to determine the amount of hydraulic fracture fluid that is recovered during flow back after stimulation, whether drilling fluid is recovered with the fracture fluid or not. It is certainly not necessary to consider recovery of drilling fluid in the definition of an oil well.

## Exhibit 1 – Resumé for Gary R. Wooley

### Personal

Born New Orleans, Louisiana, 1946  
Married with three children  
Member, director, board member or officer of  
various educational, civic and religious  
organizations



### Education

Louisiana State University:  
BS: Mechanical Engineering, January 1969  
MS: Engineering Mechanics, May 1970  
PhD: Engineering Science, December 1972, with Minors in  
Applied Mathematics and Mechanical Engineering  
Honors: NSF Fellow, LSU Dissertation Fellow, Dean's List, Phi  
Kappa Phi (Phi Beta Kappa), Sigma Xi, Tau Beta Pi, Pi Tau Sigma

Various Petroleum Professional Short Courses

### Technical Experience

1966-68	Shell Oil and Chevron Oil - Summer Engineer
1969	Humble Oil (Exxon) - Offshore Field Engineer
1970-72	Louisiana State University - Instructor
1972-78	Atlantic Richfield Co. - Sr. Research Engineer
1978-86	Enertech Engineering - Vice President
1986-Present	Wooley & Associates, Inc. - President

### Professional

ASME, SPE, API, ASM: Member, Invited Speaker, Technical  
Committee Chairman, Standardization Committees.

Registered Professional Engineer in State of Texas  
Numerous publications in professional literature  
Advisory Board to LSU Dean of Engineering  
LSU Engineering Hall of Distinction  
LSU ME Alumni Achievement Lecture Club  
Listed in various publications of Who's Who

## Exhibit 2 - List of Recent Testimony for Gary R. Wooley

The following list of recent testimony by Gary R. Wooley is compiled from available information. It is possible there may be additional testimony not included in this list:

1. 8/22/2007 trial, San Antonio, Texas, and 4/23/2007 deposition, Houston, Texas, Hollimon Oil Company (George Lugin, Westmoreland Hall), Hollimon Oil Company vs. Bay Rock Operating, No. 2005-CI-032487, 45<sup>th</sup> District, Bexar County, Texas.
2. 12/12/2007 deposition, Houston, Texas,, Darren Hughey, et al vs. Helmerich & Payne, Inc. (Chris Evans, Adams Reese), et al, No. 2006-50790, 164 District, Harris County, Texas.
3. 1/16/2008 trial, Houston, Texas, 12/28/2007 deposition, Houston, Texas, and 1/16/2007 deposition, Houston, Texas, Escondido Petroleum (Rick Oldenettel, Oldenettel & Assoc.), Kurt Wiseman Oil & gas, Ltd. and Escondido Petroleum vs. Cressman Tubulars and Sepco Tubular, 129<sup>th</sup> District, Harris County, Texas.
4. 4/22/2008 deposition, Dallas, Texas, US Synthetic (Ted Stevenson, Scott Hejny, McKool Smith), ReedHycalog, et al vs. Baker Hughes, Halliburton and US Synthetic, No. 6:06-cv-00222-WMS, U.S. Eastern District of Texas, Tyler Division.
5. 5/23/2008 deposition, Houston, Texas, Warren Drilling (Jamie Bryan, K&L Gates), Warren Drilling Inc. vs. Westside Energy Operating Company LP, et al, No. 45245, 66<sup>th</sup> District, Hill County, Texas.
6. 5/1/2008 and 7/17/2008 depositions, The Woodlands, Texas, Roberto Moreno, et al vs. Dominion, Delta Seaboard (Terry Fitzgerald, Fitzgerald Law Firm), et al, No. 5,978, 49<sup>th</sup> District, Zapata County, Texas.
7. 8/25/2008 deposition, Edmonton, Alberta, Canada, Dreco (Kevin Feehan, Fraser Milner), et al vs. Ken Wenzel, et al, Alberta Queen's Bench Action No. 020312910.

8. 9/30/2008 deposition, Houston, Texas, J. B. Steverson vs. GlobalSantaFe Corporation (Todd Crawford, Balch & Bingham), No. 1:04CV885-LG-RJW, U.S. District, Southern District of Mississippi, Southern Division.
9. 10/31/2008 deposition, Houston, Texas, Future Acquisition (Kirk Worley, Haynes Boone) vs. Sabco Oil and Gas, No. 2007-48,357, 333<sup>rd</sup> District, Harris County, Texas.
10. 11/21/2008 deposition and 12/10/2008 arbitration, Houston, Texas, Formosa Hydrocarbons (Ken Alexander, Porter Hedges) vs. Crown Drilling, No. 69 198 Y 04049 07, American Arbitration Association, New Orleans, Louisiana.
11. 1/16/2009 deposition, Houston, Texas, Juno Energy (Glenn Ballard, Bracewell & Giuliani) vs. Aoco Operating, et al, No. 2007-64397, 164<sup>th</sup> District Court, Harris County, Texas.
12. 1/19/2009 deposition, Houston, Texas, W. B. Supply, Mann Ferrostaal (Rick Oldenettel, Oldenettel & Assoc) vs. Jindal Saw, Ltd., No. 4:07-cv-02995, U. S. District Court for the Southern District of Texas, Houston Division.
13. 2/6/2009 deposition and 3/18/2009 trial testimony, Houston, Texas, Maguire Oil Company (Donald Herrmann, Kelly Hart & Hallman) vs. City of Houston, No. 817512, County Court at Law #4, Harris County, Texas.
14. 11/4/2008 and 6/22/2009 depositions, Dallas, Texas, Gardes Energy vs. Patriot Oil & Gas (Brian Melton, Shackelford Melton), No. 06-02603-E, 101<sup>st</sup> District, Dallas County, Texas.
15. 7/22/2009 and 7/28/2009 depositions, Houston, Texas, Davis-Lynch (Butch Boyd, Eric Adams, Mehaffey Weber) vs. Weatherford, No. 6:07-CV-559-JDL, U.S. Eastern District of Texas, Tyler Division.
16. 12/4/2009 deposition, Houston, Texas, Larry Mullins vs. Fowler Transportation (Jason Wylie, Wylie Law Firm), No. 08-08-578, 271<sup>st</sup> District, Wise County, Texas.
17. 6/4/2010 deposition and 11/2-4/2010 trial, Houston, Texas, Tesco (Glenn Ballard, Bracewell & Giuliani) vs. Weatherford, No. H-08-2531, U. S. Southern District, Houston Division.

18. 7/13/2010 deposition, Houston, Texas, Quicksilver Resources (Dan McClure, Fulbright & Jaworski) vs. Eagle Drilling, et al, No. H-08-868, U. S. Southern District, Houston, Division.
19. 7/15/2010 deposition, Houston, Texas, No. 2009-14763, Norwood (George Diaz Arrastia, Scherrmeister Diaz Arrastia) vs. Schlumberger, 151<sup>st</sup> District, Harris County, Texas.
20. 9/21/2010 deposition, The Woodlands, Texas, Lexington vs. NAI (Chad Gauntt, Gauntt Earl & Birney), No. 4:08-CV-03589, U.S. District Court, Southern District, Southern District, Houston Division.
21. 11/11/2010 deposition, Houston, Texas, Migl, et al vs. Watson Pipe (Clay Hoblit, Hoblit Ferguson), No. 07-05-20634-CV, 25<sup>th</sup> District, Lavaca County, Texas.
22. 11/19/2010 deposition, Houston, Texas, Oracle and Delphi vs. Warrior Energy Services (Gary Russo, Jones Walker), No. 09-5504, U. S. Eastern District, Louisiana.
23. 1/19-20/2011 trial and 1/26-27/2011 trial, Toronto, Canada, Varco Canada (Peter Wilcox, Tory) vs. Pason, Canada Federal Court, No. T-436-05, Toronto, Ontario, Canada.
24. 6/21/2011 deposition, Houston, Texas, 1/23/2012 trial, Gulf Energy Exploration, Corp. vs. Railroad Commission of Texas, Superior Energy Services, L.L.C. (Randy Friday, Crady, Jewett & McCulley) and Fugro Chance, Inc., No. 09-08-0809, 267<sup>th</sup> District Court, Calhoun County, Texas.
25. 9/1/2011 and 9/15/2011 depositions, Houston, Texas, Dan Hughes, et al vs. Weatherford, Blowout Tools (Randy Friday, Crady, Jewett & McCulley), et al, No. 2009-CVF-001367D3, 341<sup>st</sup> District, Webb County, Texas.
26. 10/3/2011 trial, Edmonton, Alberta, Canada, Wenzel Downhole Tools Ltd. and William Wenzel vs. National-Oilwell Canada Ltd., et al (Tim Wakefield, Fraser Milner), Docket T-1327-05, Federal Court of Canada, Trial Division.
27. 10/18/2011 deposition, Houston, Texas, Oracle Oil, LLC vs. Wise Well Intervention Services, et al (Dan Rayburn, Daigle Rayburn), No. 584,023, 19<sup>th</sup> Judicial District, EBR Parish, Louisiana.

28. 10/14/2011 deposition, Houston, Texas, Patron Energy, LLC vs. Baker Hughes, Plaster & Wald Consulting Corporation, (Marcus Tucker, Royston Razor), et al, No. 2009-60465, U. S. District Court of Harris County, Texas.
29. 12/19/2011 deposition, Houston, Texas, Weatherford (Dean Lechtenberger, Winston Strawn) vs. Halliburton, No. 2:09-CV-00261, U.S. District for the Eastern District of Texas, Marshall Division.
30. 1/13/2012 deposition, Fort Worth, Texas, Damon and Amber Smith (Allen Stewart) vs. Devon Energy Production Company, No. 4:11-CV-00104, U.S. Eastern District, Sherman Division.
31. 1/25/2012 deposition, Oklahoma City, Oklahoma, Halliburton energy Services, Inc., vs. Axis Technologies, LLC and Brian Wilkinson (Phillip Free, Hall Estill), No. 11-00267-D, 95<sup>th</sup> District, Dallas County, Texas.
32. 2/1/2012 deposition, Houston, Texas, United Resources, LP, et al, vs. Sepco Tubulars, et al (Tim Hightower, Hightower Russo), No. 6,112, 49<sup>th</sup> District, Zapata County, Texas.

### Exhibit 3 - List of Documents Examined

1. U.S. Patent No. 6,659,157
2. U.S. Patent No. 7,032,662
3. Prosecution history file for the '157 Patent
4. Prosecution history file for the '662 Patent
5. Plaintiff's Proposed Claim Construction Statement
6. February 28, 2012 Letter from Christopher Davis regarding Defendants' proposed claim construction
7. Joint Claim Construction and Prehearing Statement